CHAPTER 1.12 – WET Limit Compliance Schedules

This chapter is intended to help staff make decisions regarding appropriate time frames and requirements for WET limit compliance schedules in WPDES permits.

NOTICE: This document is intended solely as guidance, and does not contain any mandatory requirements except where requirements found in statute or administrative rule are referenced. This guidance does not establish or affect legal rights or obligations, and is not finally determinative of any of the issues addressed. This guidance does not create any rights enforceable by any party in litigation with the State of Wisconsin or the Department of Natural Resources. Any regulatory decisions made by the Department of Natural Resources in any matter addressed by this guidance will be made by applying the governing statutes and administrative rules to the relevant facts.

Standard WET Limit Compliance Schedule

Whole effluent toxicity (WET) limits are required according to s. NR 106.08, Wis. Adm. Code, which says that: "*Whole effluent toxicity limits shall be imposed in a WPDES permit whenever the RPF...exceeds 0.3. Whole effluent toxicity limits may be imposed, on a case-by-case basis, whenever facility-specific whole effluent toxicity test data indicate toxicity to aquatic life as determined in s. NR 106.09. Whole effluent toxicity limits may also be imposed in the absence of facility-specific whole effluent toxicity test data, on a case by-case-basis, whenever facility-specific or site-specific data or conditions indicate toxicity to aquatic life that is attributable to the discharger."* The Department evaluates all surface water dischargers to determine the need for WET limits and monitoring at the time of permit reissuance (see Chapter 1.3 for guidance regarding imposition of WET monitoring and limits). As with other new limits in WPDES permits, a compliance schedule usually accompanies a new WET limit, in order to give the permittee time to take the actions necessary to insure compliance with the new limit. WET limit compliance schedules usually include a Toxicity Reduction Evaluation (TRE), which is necessary to determine what is causing effluent toxicity and what actions are needed to remove toxicity and achieve compliance with the new limit.

Regular WET monitoring is usually postponed until after the compliance schedule, since it is generally true that compliance-type WET tests do not provide much additional data during these investigations. TREs often include modified sampling schemes which include single-species, screening-type tests instead of regular WET tests. Regular WET monitoring should be required after the compliance schedule for the remaining term of the permit in order to demonstrate compliance with the new limit. Only the monitoring which accompanies the limit is postponed (e.g., if a chronic limit is being given, only chronic monitoring is postponed - acute monitoring begins upon reissuance). The following is an example of the standard WET Limit Compliance Schedule language and time schedules:

Standard Compliance Schedule

Required Action	Date Due
Submit **part one** of a Toxicity Reduction Evaluation (TRE) plan describing procedures to be used to identify the source(s) responsible for the effluent toxicity.	(1-3 months from permit issuance)
Implement part one of the TRE plan, make a reasonable attempt to identify the source(s) of the toxicity, and submit a report to the Department presenting the results of the evaluation.	(1 -1.5 yrs from permit issuance)
Submit **part two** of the TRE Plan describing actions to be taken to reduce or eliminate the toxicity identified in part one of the TRE and the dates by which those actions will be implemented.	(~1 month from the end of step 2)
Submit a progress report identifying the actions taken to date to implement part two of the TRE plan.	(about 1/2 way through part 2)
Complete all actions identified in the TRE plan and achieve compliance with the effluent toxicity limitation.	(1 -1.5 yrs from the end of step 2)

The schedule shown above is usually placed into the WPDES permit when a permittee needs time to complete a full toxicity reduction evaluation. This includes the need for time to investigate the source(s) of toxicity as well as time to

investigate and choose the best method(s) for removing that toxicity once the source has been identified. This standard WET compliance schedule allows about 3 years from permit issuance to complete a TRE and meet the limit.

This version of the compliance schedule is appropriate in most cases when a permittee is being given a new WET limit, and therefore is the language that is available in the "picklist" when drafting a permit in the "**S**ystem for **W**astewater **A**pplications, **M**onitoring, and **P**ermits" (SWAMP). When including a compliance schedule for a WET limit in a permit, staff should give specific dates for each step in the compliance schedule rather than using a narrative such as, "6 months beyond permit issuance." Guidance in Chapter 2.2 includes guidance for permittees and labs regarding how to complete each step of the standard TRE compliance schedule.

Reasons for Deviating From the Standard Compliance Schedule

WET compliance schedules usually last about 3 years (as shown in the standard schedule above). Most successful TREs include removal, reduction, substitution, or pretreatment of the source(s) and can be completed during the standard 3 year schedule. According to s. NR 106.17, Wis. Adm. Code, a WPDES permit limit compliance schedule cannot exceed 5 years in length, "except when performing a toxicity study to alter a secondary value". Since a WET limit cannot be based on a "secondary value", a WET limit compliance schedule cannot extend beyond 5 years.

Although most TREs can be completed in 3 years, it may be necessary to deviate from the standard schedule in some circumstances. Construction of a whole new treatment system or some other major action are possible justifications for lengthening the time allowed by the compliance schedule. Conversely, a permittee may not need the full 3 years if they have already completed some parts of the TRE prior to permit reissuance (e.g., they have identified the source of toxicity and only need to determine how to remove it). Other circumstances may exist which call for a longer or shorter schedule, but it is important to insure that there is enough time (ideally, at least 1 year) between the end of the TRE and the end of the permit in most cases, in order to allow time for WET monitoring. It is usually necessary to conduct WET testing after the compliance schedule is complete in order to demonstrate that the effluent is in compliance with the WET limit before the permit is reissued. If the permittee does not have time to demonstrate compliance with the WET limit, via WET monitoring, the WET limit will most likely have to be carried over into the next permit term. The Biomonitoring Team recommends allowing no more than 4 years (in a 5 year permit) in most cases to allow enough time to show that the problem has been resolved.

Some reasons for deviating from the standard schedule are given below; there may be other reasons which are not discussed here. Reasons for changing standard compliance schedule language should be explained in briefing memos or other permit documents, so that others can tell why decisions were made, and shared with the Biomonitoring Coordinator. The following are some examples of reasons why staff may want to modify the standard TRE compliance schedule that appears in SWAMP:

Major Modification or Construction of a New WWTP. Construction of a whole new treatment system or some other major action are possible justifications for lengthening the time allowed by the compliance schedule. In some cases, especially when staff have good reason to believe that past toxicity will be resolved by new treatment processes, it may be acceptable to leave out the compliance schedule altogether. If a compliance schedule is not given for these reasons, the WET limit should be made effective and monitoring should start as soon as the upgrade is complete. When determining the correct amount of WET monitoring to assign after the completed upgrade, the WET Checklist (described in Chapter 1.3) should be completed based on WET data and toxicity potential as it exists at the time of permit issuance, since it is necessary for the permittee to demonstrate that the upgrade has reduced their potential.

Staff should remember that toxicity can be caused by many factors and an upgrade that removes more solids or BOD_5 may not necessarily improve the treatment or removal of substances causing effluent toxicity. If it is unclear whether an upgrade will resolve toxicity problems, it may be wise to require toxicity identification and reduction studies prior to the upgrade. It is usually easier to judge whether treatment upgrades will better treat effluent toxicity when the cause(s) of toxicity are known. If staff suspect that the upgrade will resolve past toxicity problems, but do not know this for sure, another option may be a WET limit and/or TRE "trigger" (see discussion below).

Permits that are < 5 years in length. According to the *Water Quality Rules Implementation Plan (DNR, 1998)*, if a permit lasts < 5 years, a compliance schedule may extend beyond the term of the permit. In this case, an interim limit is needed (see s. NR 106.17, Wis. Adm. Code). Interim WET limits may be derived like interim chemical-specific limits, with TU_as and rTU_cs representing current effluent quality (see *WQ Rules Implementation Plan*, Ch10). Section NR 106.17, Wis. Adm. Code, also allows non-numeric interim limits such as requiring source reduction activities or start-up of a component of a treatment system. The intent of an interim limit is to not allow an increased discharge of the substance (in this case, effluent toxicity) over the duration of the compliance schedule. It is strongly suggested that staff contact the Biomonitoring Coordinator anytime an interim WET limit is thought to be needed.

Chloride Source Reduction and WET Compliance Schedules. Special allowances may be given in situations where chloride is thought to be the cause of whole effluent toxicity. In some situations, it may be necessary to allow time to demonstrate that chloride is the cause of toxicity. If this is true, a compliance schedule may need to be written to allow time to make this demonstration. Example compliance schedules for these situations are given in Chapter 2.10, "Chlorides and WET Testing".

Intermittent Discharges. The standard, 3 year WET compliance schedule may not be appropriate in situations where the discharge is intermittent or seasonal. In these cases, time allowed for each compliance schedule step may need to be adjusted to account for shorter discharge periods. Since these discharges occur for fewer days in a given year, more time may be needed between compliance schedule steps, in order to allow the permittee time to conduct toxicity investigations.

In the standard compliance schedule, a year or more is usually allowed for identifying the source(s) of toxicity in a continuous discharge. If an intermittent discharge only occurs for <6 months of the year, it may be necessary to allow up to 2 calendar years for the completion of this step, so that the permittee has enough time to collect and manipulate effluent samples and confirm any findings. The following is example language and time schedules for a TRE compliance schedule that may be given to a permittee with an intermittent discharge (with changes from the standard compliance schedule **highlighted**):

Required Action	Date Due
Submit part one of a Toxicity Reduction Evaluation (TRE) plan describing procedures to be used to identify the source(s) responsible for the effluent toxicity.	(1-3 months from permit issuance)
Implement part one of the TRE plan, make a reasonable attempt to identify the source(s) of the toxicity, and submit a report to the Department presenting the results of the evaluation.	**(2 -2.5 yrs from permit issuance)**
Submit part two of the TRE Plan describing actions to be taken to reduce or eliminate the toxicity identified in part one of the TRE and the dates by which those actions will be implemented.	(~1 month from the end of step 2)
Submit a progress report identifying the actions taken to date to implement part two of the TRE plan.	(about 1/2 way through part 2)
Complete all actions identified in the TRE plan and achieve compliance with the effluent toxicity limitation.	(1 -1.5 yrs from the end of step 2)

WET Limits Driven by Limited Data or Intermittent Toxicity. Federal (GLI) and state regulations may sometimes require that a WET limit be given when a small number of WET failures have occurred, even if toxicity has not occurred in the effluent for some time or if toxicity is not always present in the effluent. This type of situation may occur more frequently with Great Lakes basin dischargers, due to the stringent WET reasonable potential procedures in the Great Lakes Water Quality Implementation Guidance (see Chapter 1.3, page 28), which require a WET limit in the event of a single WET test failure.

Although past WET failures may suggest that there is reasonable potential for receiving water impacts from the effluent due to toxicity, which requires the imposition of a WET limit, TREs are much more difficult when toxicity is no longer present or occurs infrequently. In these cases, a couple of things can be done. One option is to extend the WET limit compliance schedules beyond the standard 3 years, in order to allow more time to determine whether toxicity is still present in the effluent and/or to identify and remove the source(s) of intermittent toxicity. Another

option may be to place a "trigger" in the permit (see below). The following is an example compliance schedule that may be used for permittees with less than 2 failures in the last 2 years prior to permit reissuance (with changes from the standard compliance schedule **highlighted**):

Required Action	Date Due
Submit part one of a Toxicity Reduction Evaluation (TRE) plan describing procedures to be used to identify the source(s) responsible for the effluent toxicity. **This plan must include at least quarterly WET monitoring (during implementation of part one of the TRE) to establish the presence/absence of toxicity.**	(1-3 months from permit issuance)
Submit a progress report identifying actions taken to date to implement part one of the TRE plan.	**(½ way through part 1)**
Implement part one of the TRE plan, make a reasonable attempt to identify the source(s) of toxicity **that occurs during this period,** and submit a report to the Department presenting the results of the evaluation.	**(2-3 yrs from permit issuance)**
Submit part two of the TRE Plan describing actions to be taken to reduce or eliminate the toxicity identified in part one of the TRE **(if toxicity was present)** and the dates by which those actions will be implemented. **If toxicity was not present during part one of the TRE, submit a plan for continued WET monitoring for the duration of the permit term to establish the continued absence of toxicity.**	**(~1 month from the end of step 2)**
Submit a progress report identifying actions taken to date to implement part two of the TRE plan.	**(½ way through part 2)**
Complete all actions identified in the TRE plan and achieve compliance with the effluent toxicity limitation.	**(Permit expiration date)**

Setting the WET limit effective date at the end of the permit allows the permittee plenty of time to determine whether a toxicity problem still exists or if the past failures are no longer representative of the current discharge at the time of the next reissuance. If regular, frequent monitoring done during this 5-year compliance schedule shows that toxicity is no longer present in the discharge, it may be possible to argue that older WET failures are no longer representative of the discharge (i.e., the WET limit may not be required in the next reissuance). If toxicity occurs at any time during the compliance schedule, the permittee will be required to attempt to identify and take steps to remove that toxicity prior to the next reissuance (the WET limit will be required in the next reissuance unless the permittee has enough data showing that the toxicity problem has been resolved).

A TRE compliance schedule may not always be appropriate when a WET limit is given. In some situations it may be appropriate to make the WET limit effective immediately upon reissuance and allow a TRE to begin if future toxicity occurs (for example, if toxicity is infrequent, if toxicity hasn't occurred for a few years, or if a TRE has already been completed but data does not exist post-TRE to demonstrate removal of toxicity).

Triggers. (See also "WET Limits Driven by Limited Data or Intermittent Toxicity" above). Regulations may sometimes require that a WET limit be given when a small number of WET failures have occurred, even if toxicity has not occurred in the effluent for some time or if toxicity is not always present in the effluent. In other cases, staff and/or the permittee may suspect that past failures which are driving WET limit recommendations are no longer representative of the current discharge, but there may not be enough conclusive data to leave those failures out of the reasonable potential calculation.

Although past WET failures may suggest that there is reasonable potential for receiving water impacts from the effluent due to toxicity, which requires the imposition of a WET limit, TREs are much more difficult when toxicity is no longer present or occurs infrequently. In these cases, a couple of things can be done. One option is to extend the WET limit compliance schedule beyond the standard 3 years, in order to allow more time to determine whether toxicity is still present in the effluent and/or to identify and remove the source(s) of intermittent toxicity (see above). A second option is to place a "trigger" in the permit.

A "trigger" may be most appropriate for those situations where available toxicity data is old, questionable, or limited, and it is necessary to gather more WET data prior to the imposition of a WET limit. If a "trigger" is to be placed into a permit WET language in the effluent limits table, standard WET footnote, and WET compliance schedule language will need to be modified. The following is example "trigger" language:

1) Effluent Limits Table "Note"

Monitoring Requirements and Effluent Limitations					
Parameter	Limit Type	Limit and units	Sample Frequency	Sample Type	Notes
(acute/chronic) WET	Daily max.	1.0 *(TU_a/rTU_c)*	Quarterly	24-hr flow prop comp	**See WET footnote (p.) and compliance schedule (p.) for applicability**

2) "Trigger" language (to be placed into the WET footnote directly below the "WET Testing Frequency" section):

WET Limit Applicability: If any *(acute/chronic)* WET test completed during the first twelve months of this permit show positive results, the remaining tests will be waived and the Whole Effluent Toxicity Compliance Schedule (p.) will be initiated. After the compliance schedule is completed, the *(acute/chronic)* WET limit will become effective and quarterly *(acute/chronic)* monitoring will be required for the remainder of the permit term. If no *(acute/chronic)* tests conducted in the first twelve months of this permit show positive results, the compliance schedule will be waived, the limit will not become effective, and the *(acute/chronic)* monitoring shown above will be required.

3) WET compliance schedule language (with changes from the standard compliance schedule **highlighted**)

Required Action	Date Due
Submit part one of a Toxicity Reduction Evaluation (TRE) plan describing procedures to be used to identify the source(s) responsible for the effluent toxicity.	**90 days after 1st positive test noted in the 1st year**
Implement part one of the TRE plan, make a reasonable attempt to identify the source(s) of the toxicity, and submit a report to the Department presenting the results of the evaluation.	**(2 yrs from permit issuance)**
Submit part two of the TRE Plan describing actions to be taken to reduce or eliminate the toxicity identified in part one of the TRE and the dates by which those actions will be implemented.	(~1 month from the end of step 2)
Submit a progress report identifying the actions taken to date to implement part two of the TRE plan.	(about 1/2 way through part 2)
Complete all actions identified in the TRE plan and achieve compliance with the effluent toxicity limitation.	(1 -1.5 yrs from the end of step 2)

Reduction in Monitoring After the Successful Completion of a TRE

Permit language may allow a reduction in monitoring, in certain circumstances, after a TRE has been successfully completed. For example, if frequent monitoring (bimonthly or quarterly) is to be included in the permit, permit language may be added which allows monitoring to be reduced after the permittee has submitted at least 1 year of passing WET data. It is important to note that when WET limits are given, the minimum monitoring frequency allowed by federal regulations at 40 CFR 122.44(i)(2), is annually. The reduced monitoring frequency should be determined by the permit drafter at the time of permit issuance and placed in the permit. This reduced frequency may be determined by completing the WET Checklist under the assumption that toxicity is no longer present (for example, the original Checklist, minus the points assessed for RPF). WET limits should remain effective until the next reissuance (when they will be re-evaluated).

The following example permit language may be used:

> "*A Whole Effluent Toxicity Limitation will take effect on January 1, 2003. If the Department agrees, in writing, that bimonthly testing in 2003 shows that the effluent no longer exhibits positive acute toxicity, the acute monitoring frequency may be reduced to twice yearly for the duration of the permit.*"